

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 provides for a fixed and moveable vane, then goes on to explain that the movable vane is fixed to a second component. The language providing for the component to be both fixed and movable is unclear. Providing language such as "with respect to the swiveling motor" would help to clarify the operation of the vanes.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 4, 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong (US 3,939,933) in view of Colston (US 3,904,042). Armstrong discloses a variable flow hydraulic pump (**74**) in communication with a hydraulically operated device (**34**), at a centre point (axis **16**) of a vehicle. Column 2, lines 8-10 of Armstrong explain that the hydraulically operated device, while described as being a ram in the detailed description, may also be in the form of a vane motor. Armstrong does not directly disclose a motor arranged in the rotary axis of the vehicle.

Colston discloses a motor (42) with at least one fixed vane (A in Examiner's Appendix) and one moveable vane (43) wherein the vanes are connected to two different rotary components (col. 3, ln. 60-63). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Armstrong as taught by Colston in order to provide a central force for actuating the articulation of the vehicle. Regarding claim 4: While Colston discloses a single motor in the rotary axis, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include an additional motor, to provide additional power for the articulation of the vehicle.

4. Claims 3, 6-10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong in view of Colston and Sprinkle et al. (US 2003/0013575). Armstrong and Colston disclose as discussed above, but do not directly disclose a piston pump with a swashplate or a controller with sensors. Sprinkle discloses a pump with a swashplate (118) that is controlled by a microprocessor (52), which is connected to a sensor (46). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Armstrong as taught by Colston and Sprinkle in order to provide a means of changing the flow of the pump as well as a means of controlling the pump as the operating status of the vehicle changes (col. 4, ln. 62-65 states that it is clear that an electrical element may be used to signal the state of the vehicle).

5. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong in view of Colston and Sprinkle as applied to claims 7 and 11 above, and

further in view of Sakamoto et al. (US 5,584,346). Armstrong, Colston and Sprinkle disclose as discussed above, but do not directly disclose a joystick connected to a controller. Sakamoto discloses the use of a joystick (**220** with a force feedback function; col. 17, ln. 41-42 indicates that the joystick has a return to neutral function). The joystick is connected to an electronic controller (**26**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Armstrong as taught by Colston, Sprinkle and Sakamoto in order to provide an alternative means of steering a vehicle, requiring the use of only one hand.

6. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong in view of Colston and Sprinkle as applied to claim 11 above, further in view of Sakaki (US 2002/0170769). Armstrong and Sprinkle disclose as discussed above, but do not directly disclose that the flow of the pump is controlled by a controller according to the steering angle of the steering device. Sakaki discloses a steering system wherein the operation of the pump is dependent on the steering angle recorded by a controller (**42**) (¶ 0042, ln. 6-12). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Armstrong, Colston and Sprinkle as taught by Sakaki in order to provide a way of controlling the operation of the pump via an input means commonly used to determine the operating condition of the vehicle.

Response to Arguments

7. Applicant's arguments filed 10/08/2009 have been fully considered but they are not persuasive. Applicant's arguments were based on the claims, as amended, and have been addressed above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurice Williams whose telephone number is (571) 272-4263. The examiner can normally be reached on Monday - Friday, 8 a.m. - 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maurice Williams/
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January 15, 2010

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Examiner's Appendix

(Colston US 3,904,042)

